

Them's the rules, son

Mike Jerram

When regulations take precedence over common sense, safety, cost and everything else, you know you're in the aviation business. By Tom Geake

It was the winter of 1961-62 and I was in my first graduate job, working at Beagle Aircraft. Sir Peter Masefield had bounced enthusiastically into the design office as he was wont, rather like Tigger in Winnie the Pooh. He was full of enthusiasm for a new project, the Sea Beagle. A Sea Lord had visited the stand at Farnborough, seen the mock-up of the B206 executive twin, and pronounced it the ideal Admiral's Barge of the future.

I was given the arrester hook to design. It was the first project I had handled on my own without the supervision of a senior engineer, so I was determined to do very well indeed. Quality was what mattered, and quality is fitness for purpose. The purpose of the arrester hook was to slow down the aircraft when landing on a deck, so what retardation would be needed? I visited the aerodynamicists and made some calculations that showed that an

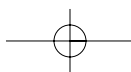
arrester hook was unnecessary. In the guaranteed 20kt headwind the aircraft could land and stop safely using either its wheel brakes or the reverse thrust from the propellers despite a wet deck.

I wrote a report to this effect and suggesting that the superb quality and engineering at Beagle made a simultaneous failure of both retarding mechanisms so unlikely that it was an acceptable risk. I felt very pleased because my design had no

Top: test pilot John 'Pee Wee' Judge flies a Beagle 206 early in 1965
Below: Beagle 206 production line



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**Above: ex Queens Flight Beagle Basset
Left: Beagle 206s lined up outside the Beagle
factory awaiting buyers**

indeed. The only cheap solution to the retardation problem that I could devise was a friable mounting and strict instructions to the pilot not to lower the hook on any account. If the pilot were to forget, the arrester hook would come away from the aircraft causing minimal damage. I wrote a report and drew attention to the weight which I thought would be excessive and cause a centre of gravity problem.

There was another reprimand, so conformity was the only way to keep my job. I designed a massive bracket to attach the hook to a bulkhead in the aft fuselage and asked for holes for the necessary services. The report drew attention to the expected retardation given in my earlier report and politely suggested that the Stress Office might like to consider the effect that the retarding force would have on the bulkhead. The result was a reinforced fuselage that removed most of the payload and a consequential shift of centre of gravity that put the wings in quite the wrong place. Those were the days before Health and Safety, or there might have been the extra problem of the medical consequences of the enormous retardation on the crew and passengers. But my report was received with satisfaction because I had done what I was told, and alerted Management to the possible consequences.

This was just one of the problems that killed the project, but I have always remembered it as a warning to be very careful about regulations. Quality is fitness for purpose, and that goes for regulations too. ■

weight, cost or drag penalties.

I was called to the Chief Engineer's office for a reprimand for my frivolous attitude to my work. The Airworthiness Regulations of the Royal Navy said that all fixed wing aircraft wanting to land on aircraft carriers had to have arrester hooks, so the Sea Beagle had to have one.

Back at my place I thought again about quality being fitness for purpose. As there was no operational need for an arrester hook, the sole purpose of the hook was to satisfy the Regulations. I made a preliminary design and

drawings for a light, blow-moulded plastic arrester hook. It would be cheap, light, totally reliable and impose little drag. I received a serious reprimand. I was to provide a real arrester hook, but the budget was tight and I was to use a proprietary hook rather than a specially made one.

My homework revealed that unless the Navy were to adjust the arrester cables specially for a Sea Beagle landing, the retardation caused by an engagement of the hook would be quite startling. Also the smallest arrester hook I could find on the market was very heavy

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